AMSAT News Service Weekly Bulletins
Issue: ANS-210
Date: 1989-07-29
Sources: amsat-ans-1989-ans-203-weekly.txt

SB ALL @ AMSAT $ANS-210.01
WB8ELK ATV BALLOON FLIGHT

HR AMSAT NEWS SERVICE BULLETIN 210.01 FROM AMSAT HQ
SILVER SPRING, MD JULY 29, 1989
TO ALL RADIO AMATEURS BT

WB8ELK ATV Balloon Experiment Yields Spectacurlar Pictures

Renowned amateur radio balloon "experimentalist" Bill Brown (WB8ELK) reports that his most ambitious effort in carrying Amateur Television (ATV) fast scan equipment aloft by a weather balloon was a complete success. On Sunday, July 23rd at 1:47 P.M. EDT Bill launched a five pound payload that included a video camera, an onboard computer, a one-watt output ATV transmitter, and a 40 mW CW identification beacon on 2M. The launch point was from the Neil Armstrong Air & Space Museum in Wapakoneta, OH and was part of ceremonies commemorating the 20th anniversary of the first moonwalk. Using a particularly large balloon capable of lifting five pounds easily, Bill reported that not only was he able achieve a "clean" launch but it felt like for a few moments that the 7 ft diameter balloon was about to take him along for the ride! Based on the data from the altimeter, the balloon had a climb rate of 1000 ft/min. It was visable to the naked eye up to an altitude of 20,000 ft. The final height attained by the balloon after two hours of flight was estimated to be around 120,000 ft! Throughout the the flight ATV'ers were thrilled by the spectacular pictures which were being sent back to earth. The pictures showed details of such things as towns, cornfields, clouds, and the beautiful Ohio countryside. Excellent picture quality reports were received by amateurs in 15 states and Canada. Besides the beautiful pictures, superimposed on the ATV picture was two lines of telemetry generated from the onboard computer. The telemetry included station identification, altitude, inside and outside air temperature, bus voltage, and a elapse-mission-time counter. During the ascent, the inside temperature stayed a "warm" +72 degrees F while the outside temperature was an extremely "frigid" -71 degrees F! When the balloon finally burst, it took over a half an hour for the payload to reach the ground. Bill said that the parachute did not start to slow its rapid decent until around 50,000 ft! Bill reported that the ATV pictures were just as facinating on the way down as they were on the way up! On the way down, however, it was speculated that the onboard computer stopped working around 36,000 ft and the pictures started to degraded in quality because the lens fogged over after the payload passed through a cloud. The payload landed safely in a cornfield about eight miles south-west of Delphos, OH. Bill, with his vast experience in recovering his balloon experiments, had a team of six "chase" vehicles following the balloon around the Ohio countryside; Bill was also using his own computer program to predict where it was going to land using the same winds aloft data that the airliners use. The recovery team tracked the balloon, using DF techniques, to a farmer's cornfield but it was still not that easy to find it. Compounding the recovery effort was the fact that the balloon had landed in the middle of a cornfield which necessitated the team having to walk a mile and a half through very tall cornstalks and fighting off "killer" mosquitoes! Even though the balloon payload was laying on the ground with its parachute beside it and sending out pictures, it was still very difficult to find. Bill said he saw on his ATV monitor, several times, tennis shoes walk by. But finally, Bill said he saw movement, and then a HAPPY FACE! The complete payload was recovered undamaged with the batterys still at full charge. This balloon experiment was particularly well suited for OSCAR satellite users having ATV equipment and a Mode B station. But most important is the factor to be able to receive the pictures during this balloon experiment is the ability to move your antennas in elevation.

For an encore, WB8ELK says that his next balloon launch will be in the first week of October from Champaign-Urbana, ILL area. Bill said his reason for doing the next balloon launch from Illinois was so radio amateurs further west could have a chance to participate in this fun activity. Bill also mentioned that due to the success of this experiment, he is encouraged to add the several new features such as a servo operated mirror so that ATV'ers can see the earth's curavture and a "store-and-forward" voice digitizer to allow a "delayed-action" 2m repeater at 100,000 ft. Also he wants to incorporate a method to control the balloon's altitude so that a controlled decent will be possible; this will make it easier for the recovery team. The ultimate goal Bill wants to try for is a around-the-world balloon flight! AMSAT-NA salutes WB8ELK for his highly innovative work with amateur radio balloon experiments.

/EX
SB ALL @ AMSAT $ANS-210.02
TENN BALLOON LAUNCHED SCRUBBED

HR AMSAT NEWS SERVICE BULLETIN 210.02 FROM AMSAT HQ
SILVER SPRING, MD JULY 29, 1989
TO ALL RADIO AMATEURS BT

WA4ADG/N4HBO Knoxville/Oakridge Balloon Launch Rescheduled for August 5, 1989

Much to the chagrin of Carl Lyster (WA4ADG) and David Fields (N4HBO), their first amateur radio balloon launch had to be scrubbed seconds before lift-off. The culprit in the payload package was a +5V regulator for the CMOS onboard computer which had failed. The failure of this important component manifested itself in the form of "erratic" telemetry. Despite valiant efforts to repair the faulty regulator, it was not possible even after two hours of on-the-spot effort. Although the telemetry system had been throughly tested for several weeks, "Murphy" decided to strike at this most inopportune moment for WA4ADG and N4HBO. As a famous corollary to "Murphy's Law" states: "The magnitude of the failure is directly proportional to the size of the crowd in attendence." The balloon's approximately 80 cu. ft. of helium was then vented to the atmosphere and the embarrassed ground crew drove home. But determined not to be frustrated again by "Murphy," the radio package is being reworked and the new launch date has been scheduled now for Saturday, August 5, 1989 at 7:30 A.M. EDT. To repeat the important frequencies, listen for the beacon on 144.34 MHz with its output of 250 mW and on 28.866 MHz with its 100 mW output beacon signal, respectively. There will be a change in the ASCII telemetry data on the VHF beacon from what was originally announced two weeks ago; it will now be: 1200 baud, 8 data bits, 1 stop bit, and no parity. This change of parameters was done to provide compatibility for those with AEA PK-232 TNCs. There will be a "pre-launch warm-up" net on a frequency of 7.242 MHz about one hour before lift-off with the NCS being WA3USG. AMSAT wishes Carl and David "good luck" in their next attempt and invite all radio amateurs to join in the fun of this amateur radio balloon experiment from Tennessee.

/EX
SB ALL @ AMSAT $ANS-210.03
AMSAT SYMPOSIUM CALL FOR PAPERS

HR AMSAT NEWS SERVICE BULLETIN 210.03 FROM AMSAT HQ
SILVER SPRING, MD JULY 29, 1989
TO ALL RADIO AMATEURS BT

- - - - CALL FOR PAPERS - - - -

20th ANNIVERSARY
1989 AMSAT Space Symposium and Annual Meeting
Des Moines, Iowa November 3-6, 1989
Hosted by the Central Iowa Technical Society (CITS)

AMSAT-NA is soliciting papers for presentation at and/or publication in the proceedings of its 1989 Space Symposium. Areas of interest include research, development, engineering, funding, construction, management and operation of OSCAR (Orbiting Satellite Carrying Amateur Radio) communications and scientific spacecraft and associated communications networks.

- Papers should be submitted for consideration by October 2, 1989

- Include audio-visual support requirements (Overhead-slides-video projection, etc.)

- Include a biography to be included in the proceedings.

Papers may be submitted in camera-ready form (8-1/2 by 11-inches) or via MS-DOS compatible disk or via electronic mail formatted for printing. Papers containing graphics or pictures must be submitted in camera-ready form.

Authors will be responsible for duplication and distribution of papers not submitted by October 2nd.

Submissions or questions should be forwarded to:

Ralph Wallio, W0RPK
CITS Chairman - AMSAT'89
1250 Highway G24
Indianola, IA 50125

Send an SASE to W0RPK for a registration information package.

Home: (515) 961-6406
Office: (515) 224-8034
Packet: W0RPK @ W0AK

/EX
SB ALL @ AMSAT $ANS-210.04
AMSAT SHORT BURSTS

HR AMSAT NEWS SERVICE BULLETIN 210.04 FROM AMSAT HQ
SILVER SPRING, MD JULY 29, 1989
TO ALL RADIO AMATEURS BT

AMSAT Short Bursts

Amateur Satellite Report (ASR) #189 went to the printers this week and will start arriving in mail boxes late next week. Because the last ASR received by AMSAT-NA members was in May, this issue of of ASR will be TRIPLE in size. To repeat the schedule for AMSAT-NA publications, the objective is to publish the AMSAT-NA Journal quarterly and the ASR in the intervening months.

Courtney Duncan (N5BF), Manager of the AMSAT Operations Net, has issued the following schedule for the next several weeks for the times and frequencies of the OPS Net. These nets on AO-13 are designed to discuss the many happenings in the world of Amateur Radio Satellites. If you have any comments or suggestions to pass along to N5BF, you can leave them to COURTNEY DUNCAN on the AMSAT-NA BBS at (314) 447-3003.

AMSAT OPERATIONS NET SCHEDULE 1989

Day	Date	Time	Orbit	Frequency	Local evening, U.S.
Sun	30 Jul	0130	863	435.970	Saturday
Thu	10 Aug	0100	886	435.970	Wednesday

de DB2OS 01May89: *** AO-10 TRANSPONDER SCHEDULE ***

14Jul89 to 01Sep89

Mode-B : from MA 000 to MA 225

O S C A R - 1 3

Date	: 14Jun89 until 16Aug89	! 16Aug89 until 16Nov89
BLON/BLAT	: 178.6/-0.8	! 210/0
Mode-B	: MA 000 to MA 110	! MA 003 to MA 160
Mode-JL	: MA 110 to MA 145	! MA 160 to MA 200
Mode-B	: MA 145 to MA 255	! MA 200 to MA 240
OFF	: %	! MA 240 to MA 003
Mode-S	: MA 150 to MA 160	! MA 210 to MA 222

Transponders will be in operation during the whole orbit from June 14 until August 16 due to excellent sun angles and power budgets. However, no perigee operations will occur between August and November due to perigee solar eclipses! The 70cm and 2M omni-directional antennas will be used from MA 230 until MA 30.

/EX